IDEXX Diagnostic Imaging

DICOM Conformance Statement

IDEXX-PACS* Imaging Software

IDEXX Web PACS Software

Cornerstone* Software

Proprietary rights notice

Contents

Introduction

Scope and field of application

This DICOM* Conformance Statement covers IDEXX DICOM Services used in combination with the IDEXX-PACS* Imaging Software, IDEXX Web PACS software (IDEXX-PACS web-hosted software), and the DICOM Imaging Module of IDEXX Cornerstone* Software (hereafter referred to collectively as IDEXX imaging software). This statement describes how the IDEXX imaging software communicates with other DICOM* 3.0–compatible devices.

This document was written with the understanding that the reader will be familiar with the concepts and terms of the DICOM 3.0 standard.

References and definitions

All references and definitions have been taken from the Digital Imaging and Communications in Medicine (DICOM) standard, parts 3.1 through 3.13, published by the National Electrical Manufacturers Association (available online at dicom.nema.org).

Acronyms and Initialisms

AE	Application Entity
CR	Computed Radiography
CT	Computed Tomography
DICOM	Digital Imaging and Communications in Medicine
DIMSE	DICOM Message Service Element
DX	Digital X-ray
FOP	First-Order Prediction
IP	Internet Protocol
JPEG	Joint Photographic Experts Group
LUT	Lookup Table
MPPS	Modality Performed Procedure Step
MR	Magnetic Resonance
MWL	Modality Worklist
NEMA	National Electrical Manufacturers Association
NH	Non-Hierarchical
NM	Nuclear Medicine
PDU	Protocol Data Unit
SC	Secondary Capture
SCP	Service Class Provider
SCU	Service Class User
SOP	Service Object Pair
TCP/IP	Transmission Control Protocol/Internet Protocol
UID	Unique Identifier
US	Ultrasound
VR	Value Representation
XA	X-ray Angiography

Implementation model

Application data flow diagram

The implementation model for the IDEXX DICOM Services is shown in figure 1.

The IDEXX DICOM Services are installed as a system service. The IDEXX DICOM server starts when the system is started and shuts down when the system is turned off. The IDEXX imaging software provides the user interface to interact with the DICOM Services.

There are three application entities associated with IDEXX DICOM Services: the IDEXX DICOM server, the IDEXX-PACS workstation software, and the IDEXX Web PACS software.

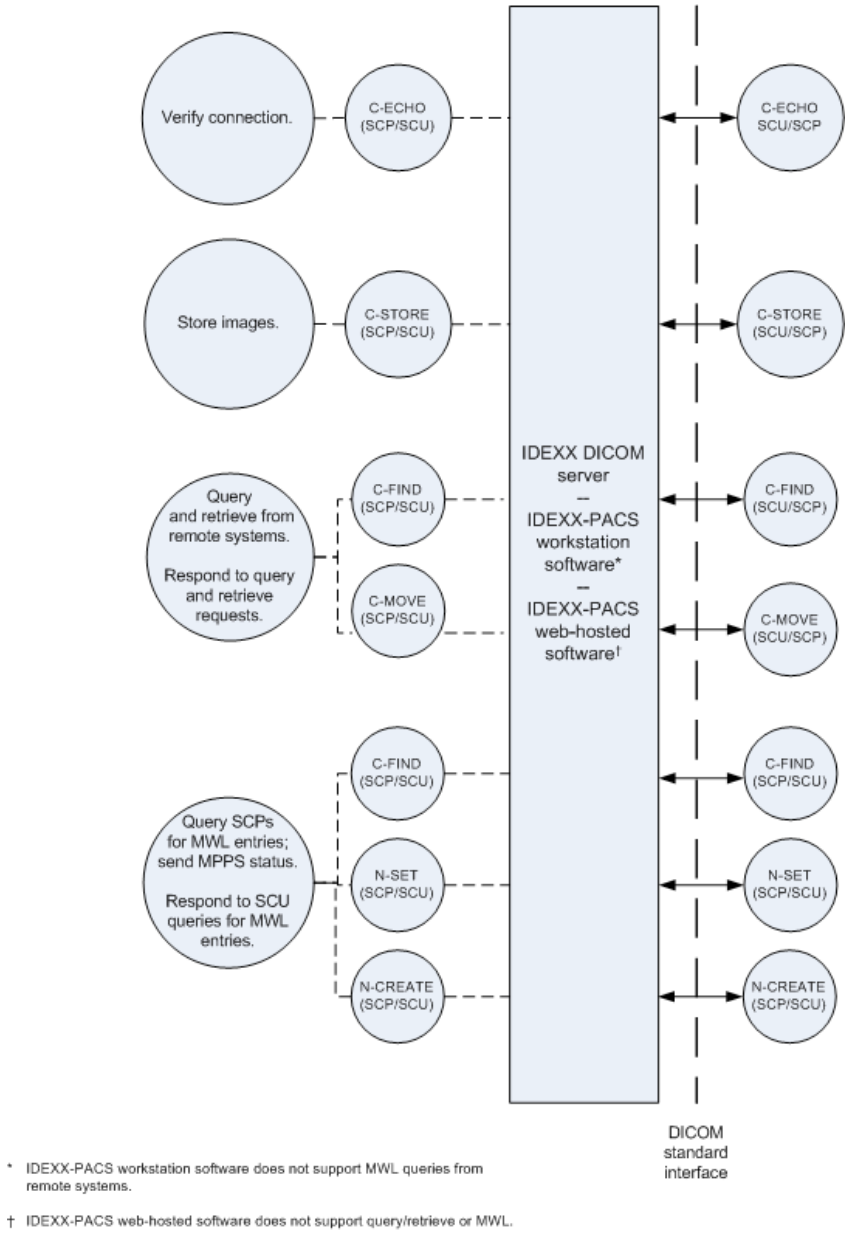

Figure 1: Application Data Flow Diagram

Functional definitions of application entities

All communication and image transfer with the remote application is accomplished utilizing the DICOM protocol over a network using the TCP/IP protocol stack.

IDEXX imaging software products support the following DICOM services:

- Verification (SCU/SCP)
- Storage (SCU/SCP)
- Query/Retrieve (SCU/SCP) (not supported by IDEXX Web PACS software)
- Modality Worklist (SCU/SCP) (not supported by IDEXX Web PACS software)

Sequencing of real-world activities

Not applicable.

AE specifications

AE specifications for IDEXX DICOM services

The IDEXX DICOM Services provide support for DICOM 3.0 SOP Classes as shown in table 1.

Table 1. Supported DICOM 3.0 SOP Classes

SOP Class	UID	Service Role
Verification	1.2.840.10008.1.1	SCP and SCU
CR Image Storage	1.2.840.10008.5.1.4.1.1.1	SCP and SCU
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	SCP and SCU
USMF Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	SCP and SCU
USMF Image Storage	1.2.840.10008.5.1.4.1.1.3.1	SCP and SCU
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	SCP and SCU
NM Image Storage	1.2.840.10008.5.1.4.1.1.5	SCP and SCU
US Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	SCP and SCU
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	SCP and SCU
SC Image Storage	1.2.840.10008.5.1.4.1.1.7	SCP and SCU
DX Image Storage—for Presentation	1.2.840.10008.5.1.4.1.1.1.1	SCP and SCU
DX Image Storage—for Processing	1.2.840.10008.5.1.4.1.1.1.1.1	SCP and SCU
US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	SCP and SCU
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	SCP and SCU
MWL Information Model—FIND	1.2.840.10008.5.1.4.31	SCP and SCU
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	SCP and SCU
Study Root FIND	1.2.840.10008.5.1.4.1.2.2.1	SCP and SCU
Study Root MOVE	1.2.840.10008.5.1.4.1.2.2.2	SCP and SCU

Association establishment policies

General

The IDEXX DICOM Services, acting in the service role of SCU, can initiate associations to send images using the C-STORE service with configurable association parameters Called-AE-Title, Calling-AE-Title, and remote IP address.

IDEXX DICOM Services can also act in the role of SCP and respond by either accepting or rejecting associations. Associations are accepted when the association request is valid—when it includes the correct application context and the correct DICOM version, and when the Called-AE-Title, Calling-AE-Title, and remote (calling) IP address are all recognized, based on the configuration. Associations are rejected when these conditions are not met.

The maximum PDU size requested or accepted by the IDEXX AE is configurable. The default size is 16,384.

Number of associations

The IDEXX AE supports multiple associations (both accepted and requested). The default number of associations is set at 50.

Asynchronous nature

Asynchronous operations are not supported by this version of the AE.

Implementation-identifying information

The Implementation Class UID is: 1.2.40.0.13.1.1

The Implementation Version String is: dcm4che-IDX-1.0

Association initiation by real-world activity

Verify communication with a remote system

Associated real-world activity

On the Remote Servers Configuration window, the user selects a server from the Remote Servers list and clicks Test Server. The SCP function listens for the C-ECHO request.

Proposed presentation contexts

Table 2. Presentation contexts for verifying communication with remote system

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	UID	Name List	UID List		
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP and SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP and SCU	None

SOP-specific conformance statement for SOP verification class

The IDEXX imaging software provides standard conformance for DICOM communication verification.

Note: Any remote system requesting a verification response needs to be configured in order to receive a response.

Send images to a remote system

Associated real-world activity

The user selects a patient on the navigation window or an image, series, or study on the image viewer window and then opens a sharing window. From the sharing window, the user can choose to send the images to a remote server via DICOM or to create a case and send it to a telemedicine provider via DICOM. In all scenarios, a list of remote AEs appears, from which the user selects one or more. The system uses the default DICOM file format to select the desired presentation context (see the user documentation for additional details).

Proposed presentation contexts

Table 3. Presentation contexts for verifying communication with remote system

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	UID	Name List	UID List		
CR Image Storage	1.2.840.10008. 5.1.4.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	UID	Name List	UID List		
CT Image Storage	1.2.840.10008. 5.1.4.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
USMF Image Storage (Retired)	1.2.840.10008. 5.1.4.1.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
USMF Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
MR Image Storage	1.2.840.10008. 5.1.4.1.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH,FOP (Process 14)	1.2.840.10008.1.2.4.70		
NM Image Storage	1.2.840.10008. 5.1.4.1.1.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	UID	Name List	UID List		
US Image Storage (Retired)	1.2.840.10008. 5.1.4.1.1.6	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
US Image Storage	1.2.840.10008. 5.1.4.1.1.6.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
SC Image Storage	1.2.840.10008. 5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
DX Image Storage—for Presentation	1.2.840.10008.5.1.4.1.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
DX Image Storage—for Processing	1.2.840.10008.5.1.4.1.1.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	UID	Name List	UID List		
US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		

SOP-specific conformance statement for SOP image storage class

The images are converted to the specified instances of the corresponding SOP Storage class(es) prior to being sent. The images are then sent sequentially to the remote system(s). When sending multiple images to a single remote system, a new association is negotiated for each image.

Receive images from a remote system

Associated real-world activity

A remote system pushes (i.e., sends) images to IDEXX DICOM Services. Upon completion of the transfer, the images are available locally in the DICOM queue and can be selected for display.

Accepted presentation contexts

Table 4. Accepted presentation contexts for receiving from a remote system

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	UID	Name List	UID List		
CR Image Storage	1.2.840.10008. 5.1.4.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	UID	Name List	UID List		
CT Image Storage	1.2.840.10008. 5.1.4.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
USMF Image Storage (Retired)	1.2.840.10008. 5.1.4.1.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
USMF Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
MR Image Storage	1.2.840.10008. 5.1.4.1.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
NM Image Storage	1.2.840.10008. 5.1.4.1.1.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	UID	Name List	UID List		
US Image Storage (Retired)	1.2.840.10008. 5.1.4.1.1.6	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
US Image Storage	1.2.840.10008. 5.1.4.1.1.6.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
SC Image Storage	1.2.840.10008. 5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
DX Image Storage—for Presentation	1.2.840.10008.5.1.4.1.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
DX Image Storage—for Processing	1.2.840.10008.5.1.4.1.1.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	UID	Name List	UID List		
US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Lossless, NH, FOP (Process 14)	1.2.840.10008.1.2.4.70		

The IDEXX imaging software conforms to the SOPs of the Storage SOP Class at Level 2 (full). No elements are discarded or coerced by the IDEXX AE. In the case of a successful C-STORE operation, the object has successfully been written to disk in the database for the IDEXX imaging software. If an image is received with the same SOP Instance UID (0008, 0018) as one that already exists, the new image will be ignored and no error message will be provided.

Initiate query request

Associated real-world activity

The IDEXX imaging software initiates a query request (C-FIND) at the study level via the Query Retrieve Level attribute (0008,0052), using a value of STUDY.

Note: The IDEXX Web PACS software does not support query requests.

Accepted presentation contexts

Table 5. Presentation context table for initiating query request

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	UID	Name List	UID List		
Study Root FIND	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.2.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
	1.2.840.10008.5.1.4.1.2.2.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None

Remote system initiates query request

Associated real-world activity

A remote system initiates a query request using the C-FIND command. The IDEXX imaging software supports queries at the study, series, or image level via the Query Retrieve Level attribute (0008,0052), which can have a value of PATIENT, STUDY, SERIES, or IMAGE. **Note:** The IDEXX web-hosted software does not support queries from remote systems.

Accepted presentation contexts

Table 6. Presentation context table for query request from remote system

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	**UID**	**Name List**	**UID List**		
Study Root FIND	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.2.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
	1.2.840.10008.5.1.4.1.2.2.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

Initiate retrieval request

Associated real-world activity

The user selects one or more studies from the query results and clicks Retrieve.

The IDEXX imaging software initiates a retrieval request (C-MOVE) at the study level via the Query Retrieve Level attribute (0008,0052), using a value of STUDY.

Note: The IDEXX web-hosted software does not support retrieval requests.

Accepted presentation contexts

Table 7. Presentation context table for initiating retrieval request

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	**UID**	**Name List**	**UID List**		
Study Root MOVE	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.2.2.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
	1.2.840.10008.5.1.4.1.2.2.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None

Remote system initiates retrieval request

Associated real-world activity

A remote system initiates a retrieve request using the C-MOVE command. The IDEXX imaging software supports retrieval at the study, series, or image level via the Query Retrieve Level attribute (0008,0052), which can have a value of PATIENT, STUDY, SERIES, or IMAGE.

Note: The IDEXX web-hosted software does not support retrieval requests from a remote system.

Accepted presentation contexts

Table 8. Presentation context table for retrieval request from remote system

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	**UID**	**Name List**	**UID List**		
Study Root MOVE	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.2.2.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
	1.2.840.10008.5.1.4.1.2.2.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

Query a specified SCP for MWL entries and send MPPS status

Associated real-world sctivity

The IDEXX imaging software, acting in the role of SCU, can query an SCP that has been set up for MWL entries. On each change of the MPPS status, the IDEXX imaging software sends the new status.

Note: The IDEXX web-hosted software does not support MWL queries.

Proposed presentation contexts

Table 9. Presentation context table for querying for MWL entries and sending MPPS status

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	**UID**	**Name List**	**UID List**		
MWL Information Model—FIND	1.2.840.10008.5.1.4.31	Implicit VR Little Endian	1.2.840.1008.1.2	SCU	None
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	Implicit VR Little Endian	1.2.840.1008.1.2	SCU	None

Remote modality initiates a query for MWL

Associated real-world activity

The Cornerstone system acts as an SCP for MWL functions. A remote system initiates a query request to retrieve a list of MWL entries. The remote system can then send MPPS status updates as procedure steps are performed.

Please note that this functionality is not currently available in the IDEXX-PACS software.

Proposed presentation contexts

Table 10. Presentation context table for responding to queries for MWL entries

Abstract Syntax		Transfer Syntax		Service Role	Ext. Neg.
Name	UID	Name List	UID List		
MWL Information Model—FIND	1.2.840.10008.5.1.4.31	Implicit VR Little Endian	1.2.840.1008.1.2	SCP	None
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	Implicit VR Little Endian	1.2.840.1008.1.2	SCP	None

Communication profiles

This section explains communication profiles supported by the IDEXX imaging software.

Supported communication stacks

TCP/IP is the only supported communication stack.

TCP/IP

The IDEXX AE provides TCP/IP support for network communication.

Physical media support

The physical media supported by the IDEXX AE depends on the network hardware installed in the computer.

Extensions, specializations, and privatizations

Standard extended/specialized/private SOPs for IDEXX-PACS Imaging Software

The following tags are supported by the IDEXX-PACS Imaging Software.

Table 11. Required Data for Storing in Image Manager

DICOM Tag Number	DICOM Tag Description
(0010,2297)	ResponsiblePerson
(0010,0020)	PatientID
(0010,0010)	PatientName
(0008,0030)	StudyTime
(0008,0020)	StudyDate
(0020,000D)	StudyInstanceUID

Table 12. All Other Data Stored in Image Manager

DICOM Tag Number	DICOM Tag Description
*(0008,0052)	*QueryRetrieveLevel
(0008,0050)	AccessionNumber
(0008,0022)	AcquisitionDate
(0008,002A)	AcquisitionDateTime
(0008,0032)	AcquisitionTime
(0020,4000)	ImageComments
(0020,0013)	InstanceNumber
(0010,0021)	IssuerOfPatientID
(0008,0070)	Manufacturer
(0008,1090)	ManufacturerModelName
(0008,0060)	Modality
(0010,1002)	OtherPatientIDsSequence
(0010,0030)	PatientBirthDate
(0010,0032)	PatientBirthTime
(0010,2292)	PatientBreedDescription
(0010,0040)	PatientSex
(0010,2201)	PatientSpeciesDescription
(0008,103E)	SeriesDescription
(0020,000E)	SeriesInstanceUID
(0020,0011)	SeriesNumber
(0008,0018)	SOPInstanceUID
(0008,1030)	StudyDescription
(0020,0010)	StudyID
(0028,1050)	WindowCenter
(0028,1051)	WindowWidth
(0018,1012)	
(0018,1014)	

* Mapped but not sent to Image Manager

Standard extended/specialized/private SOPs for IDEXX Web PACS

The following tags are supported by IDEXX Web PACS.

Table 13. Patient

DICOM Tag	DICOM Description
(0010,0010)	PatientName
(0010,0020)	PatientID
(0010,0030)	PatientBirthDate
(0010,0032)	PatientBirthTime
(0010,0040)	PatientSex
(0010,1010)	PatientAge
(0010,2292)	PatientBreedDescription
0010,2201)	PatientSpeciesDescription

Table 14. External patient

DICOM Tag	DICOM Description
(0010,0021)	IssuerOfPatientID
(0010,1002)	OtherPatientIDsSequence

Table 15. Client

DICOM Tag	DICOM Description
(0010,2297)	ResponsiblePerson

Table 16. Study

DICOM Tag	DICOM Description
(0008,0020)	StudyDate
(0008,0030)	StudyTime
(0008,0050)	AccessionNumber
(0008,1030)	StudyDescription
(0020,000D)	StudyInstanceUID
(0020,0010)	StudyID

Table 17. Series

DICOM Tag	DICOM Description
(0008,0060)	Modality
(0008,103E)	SeriesDescription
(0020,000E)	SeriesInstanceUID

Table 18. Image

DICOM Tag	DICOM Description
(0008,0018)	SOPInstanceUID
(0008,0022)	AcquisitionDate
(0008,002A)	AcquisitionDateTime
(0008,0032)	AcquisitionTime
(0008,0070)	Manufacturer
(0008,0080)	InstitutionName
(0008,1090)	ManufacturerModelName
(0018,1012)	DateOfSecondaryCapture
(0018,1014)	TimeOfSecondaryCapture
(0018,5101)	ViewPosition
(0020,0013)	InstanceNumber
(0020,4000)	ImageComments
(0028,0004)	PhotometricInterpretation
(0028,0008)	NumberOfFrames
(0028,0010)	Rows
(0028,0011)	Columns
(0028,0102)	HighBit
(0028,0103)	PixelRepresentation
(0028,1050)	WindowCenter
(0028,1051)	WindowWidth
(0028,1052)	RescaleIntercept
(0028,1053)	RescaleSlope

Support of extended character sets

IDEXX DICOM Services support the receipt of Unicode character-set-based images.

Codes and controlled terminology

Not applicable.

Security profiles

Not applicable.

Configuration parameters

The following fields are configurable for the IDEXX AE:

- AE Title
- Port Number
- Image Repository
- Maximum Number of Clients
- Maximum PDU Length
- DIMSE Timeout
- Request Timeout
- Socket Close Delay

The following fields are configurable for any remote AE:

- Server Name
- AE Title
- IP Address
- Port Number
- Query/Retrieve Support Indicator